

Notice of Allowability

Application No.

10/090,287

Examiner

Gail Verbitsky

Applicant(s)

BORDEN ET AL.

Art Unit

2859

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 12/23/2003.
2. ☒ The allowed claim(s) is/are 1-6 and 8-39.
3. ☒ The drawings filed on 01 March 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

G. Verbitsky
042859

Examiner's Statement of Reasons for Allowance

1. Claims 1-6, 9-17, 28-31 are allowed because the prior art fail to teach a method and apparatus for determining presence or absence of a defect in a semiconductor wafer comprising applying heat to a conductive structure being periodic in space in a direction, determining absence of the defect in the conductive structure on finding periodicity in the plurality of measurements, the periodicity is related to periodicity of the conductive structure, in combination with the remaining limitations of claims 1-6, 9-17, 28-31.
2. Claims 18-21, 34-39 are allowed because the prior art fail to teach a method for determining the quality of a conductive structure, applying heat on the conductive structure being periodic in space along a direction, measuring a first phase difference between change of the conductive structure and modulation of said heat source, analyzing whether said phase difference is larger than a second phase difference being detected with a second conductive structure that is non-defective, in combination with the remaining limitations of claims 18-21, 35-39.
3. Claims 22-27 are allowed because the prior art fail to teach a method for determining the quality of a conductive structure, applying heat on the conductive structure, wherein said conductive structure comprises a plurality of via chains, the heat applied simultaneously to more than one via chain, varying the frequency of modulation, measuring a change in temperature of said conductive structure as a function of the frequency, in combination with the remaining limitations of claims 22-27.

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4. Claims 32-33 are allowed because the prior art fail to teach a method of identifying a defect in a semiconductor wafer using a first beam to apply heat to a conductive structure, the structure being periodic in space, using a second beam to measure a signal indicative of temperature of a portion of the conductive structure, determining presence of the defect depending on spatial periodicity of the plurality of measurements, in combination with the remaining limitations of claims 32-33.

Information Disclosure Statement

5. The information disclosure statement filed on December 23, 2003 fails to comply with 37 CFR 1.98(a)(3) because it does not include copies and/ or concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language and Non Patent Literature. It has been placed in the application file, but the information referred to therein has not been considered.

Applicant is reminded that he has duty not to just disclose pertinent art references but to make the disclosure in such a way as not to "bury" it within other disclosures of less relevant prior art. see *Golden Valley Microwave Foods Inc. V. Weaver Popcorn Co. Inc.*, 24 USPQ2d 1801.

The information disclosure statement filed on December 23, 2003 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because it does not include copies and/ or concise explanation of the relevance of the Foreign references and Non Patent Literature. It has been placed in the application file, but the information referred

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to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Any inquiry concerning this communication should be directed to the Examiner Verbitsky who can be reached at (571) 272-2253 Monday through Friday 8:00 to 4:00 ET.

GKV

Gail Verbitsky

Primary Patent Examiner, TC 2800



May 28, 2004